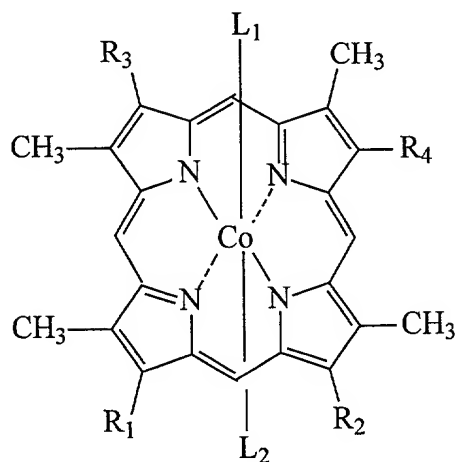


## CLAIMS

What is Claimed:

1. A cobalt-porphyrin complex having the structure:



or a salt thereof, wherein:

$R_1$  and  $R_2$  are the same or different and independently  $-(CH_2)_n-A-R_5$ , wherein A is  $-C(=O)O-$ ,  $-OC(=O)-$ ,  $-C(=O)N(R)-$ ,  $-N(R)C(=O)-$ ,  $-C(=O)-$ ,  $-N(R)-$ ,  $-O-$  or  $-S-$ , and R is hydrogen, alkyl, substituted alkyl, arylalkyl, or substituted arylalkyl, and  $n$  is 2 or 3;

$R_3$  and  $R_4$  are the same or different and independently  $-CH=CH_2$  or  $-CH_2CH_3$ ;

$R_5$  is, at each occurrence, the same or different and independently hydrogen, alkyl, substituted alkyl, aryl, substituted aryl, arylalkyl or substituted arylalkyl; and

$L_1$  and  $L_2$  are optional ligands;

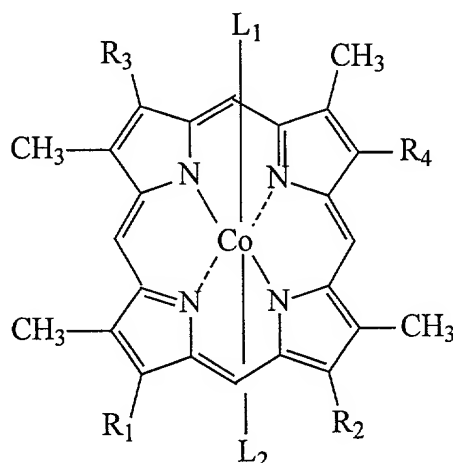
and with the proviso that the cobalt-porphyrin complex of structure (I) has no more than 5% of the redox activity of cobalt mesoporphyrin.

2. The complex of claim 1 wherein A is  $-C(=O)O-$ .
3. The complex of claim 1 wherein A is  $-OC(=O)-$ .

4. The complex of claim 1 wherein A is  $\text{-C(=O)N(R)-}$ .
5. The complex of claim 1 wherein A is  $\text{-N(R)C(=O)-}$ .
6. The complex of claim 1 wherein A is  $\text{-C(=O)-}$ .
7. The complex of claim 1 wherein A is  $\text{-N(R)-}$ .
8. The complex of claim 1 wherein A is  $\text{-O-}$ .
9. The complex of claim 1 wherein A is  $\text{-S-}$ .
10. The complex of claim 1 wherein  $n$  is 2.
11. The complex of claim 1 wherein  $n$  is 3.
12. The complex of claim 1 wherein R is hydrogen.
13. The complex of claim 1 wherein R is lower alkyl.
14. The complex of claim 1 wherein  $R_5$  is hydrogen.
15. The complex of claim 1 wherein  $R_5$  is alkyl.
16. The complex of claim 15 wherein  $R_5$  is lower alkyl.
17. The complex of claim 1 wherein  $R_5$  is substituted alkyl.
18. The complex of claim 1 wherein  $R_5$  is aryl or substituted aryl.

19. The complex of claim 1 wherein  $R_5$  is arylalkyl or substituted arylalkyl.
20. The complex of claim 19 wherein arylalkyl is benzyl.
21. The complex of claim 1 wherein  $R_3$  and  $R_4$  are the same.
22. The complex of claim 20 wherein  $R_3$  and  $R_4$  are  $-\text{CH}=\text{CH}_2$ .
23. The complex of claim 20 wherein  $R_3$  and  $R_4$  are  $-\text{CH}_2\text{CH}_3$ .
24. The complex of claim 1 wherein at least one of  $L_1$  or  $L_2$  is present.
25. The complex of claim 1 wherein both  $L_1$  and  $L_2$  are present.
26. The complex of claim 25 wherein  $L_1$  and  $L_2$  are glycinate.
27. The complex of claim 25 wherein  $L_1$  and  $L_2$  are imidazole.
28. The complex of claim 25 wherein  $L_1$  and  $L_2$  are halogen.
29. The complex of claim 25 wherein  $L_1$  and  $L_2$  are a mono- or di-substituted amino.
30. The complex of claim 25 where  $L_1$  and  $L_2$  are a substituted or unsubstituted heterocycle.
31. A composition comprising a compound of claim 1 in combination with a pharmaceutically acceptable carrier.

32. A method for treating obesity, comprising administering an effective amount of a composition comprising a cobalt-porphyrin complex and a pharmaceutically acceptable carrier, wherein the cobalt-porphyrin complex has the structure:



or a salt thereof, wherein:

$R_1$  and  $R_2$  are the same or different and independently  $-(CH_2)_n-A-R_5$ , wherein A is  $-C(=O)O-$ ,  $-OC(=O)-$ ,  $-C(=O)N(R)-$ ,  $-N(R)C(=O)-$ ,  $-C(=O)-$ ,  $-O-$  or  $-S-$ , and R is hydrogen, alkyl, substituted alkyl, arylalkyl, or substituted arylalkyl, and  $n$  is 2 or 3;

$R_3$  and  $R_4$  are the same or different and independently  $-CH=CH_2$  or  $-CH_2CH_3$ ;

$R_5$  is, at each occurrence, the same or different and independently hydrogen, alkyl, substituted alkyl, aryl, substituted aryl, arylalkyl or substituted arylalkyl; and

$L_1$  and  $L_2$  are optional ligands;

and with the proviso that the cobalt-porphyrin complex of structure (I) has no more than 50% of the redox activity of cobalt mesoporphyrin.

33. The method of claim 32 wherein the composition is administered by injection.

34. The complex of claim 32 wherein A is  $-C(=O)O-$ .

35. The complex of claim 32 wherein A is  $\text{-OC(=O)-}$ .
36. The complex of claim 32 wherein A is  $\text{-C(=O)N(R)-}$ .
37. The complex of claim 32 wherein A is  $\text{-N(R)C(=O)-}$ .
38. The complex of claim 32 wherein A is  $\text{-C(=O)-}$ .
39. The complex of claim 32 wherein A is  $\text{-N(R)-}$ .
40. The complex of claim 32 wherein A is  $\text{-O-}$ .
41. The complex of claim 32 wherein A is  $\text{-S-}$ .
42. The complex of claim 32 wherein n is 2.
43. The complex of claim 32 wherein n is 3.
44. The complex of claim 32 wherein R is hydrogen.
45. The complex of claim 32 wherein R is lower alkyl.
46. The complex of claim 32 wherein  $\text{R}_5$  is hydrogen.
47. The complex of claim 32 wherein  $\text{R}_5$  is alkyl.
48. The complex of claim 47 wherein  $\text{R}_5$  is lower alkyl.

49. The complex of claim 32 wherein  $R_5$  is substituted alkyl.
50. The complex of claim 32 wherein  $R_5$  is aryl or substituted aryl.
51. The complex of claim 50 wherein  $R_5$  is arylalkyl or substituted arylalkyl.
52. The complex of claim 51 wherein arylalkyl is benzyl.
53. The complex of claim 32 wherein  $R_3$  and  $R_4$  are the same.
54. The complex of claim 53 wherein  $R_3$  and  $R_4$  are  $-\text{CH}=\text{CH}_2$ .
55. The complex of claim 53 wherein  $R_3$  and  $R_4$  are  $-\text{CH}_2\text{CH}_3$ .
56. The complex of claim 32 wherein one of  $L_1$  or  $L_2$  is present.
57. The complex of claim 32 wherein both  $L_1$  and  $L_2$  are present.
58. The complex of claim 57 wherein  $L_1$  and  $L_2$  are glycinate.
59. The complex of claim 57 wherein  $L_1$  and  $L_2$  are imidazole.
60. The complex of claim 57 wherein  $L_1$  and  $L_2$  are halogen.
61. The complex of claim 57 wherein  $L_1$  and  $L_2$  are a mono- or di-substituted amino.
62. The complex of claim 57 wherein  $L_1$  and  $L_2$  are a substituted or unsubstituted heterocycle.